Homework 10: For Loops

CS 1323 Fall 2023

Name:
Student ID (usually 112-XXX-XXXX or 113-XXX-XXXX):

1. (12 points; 3 points each part) Trace the for loops below in the tables to the right. If the loop is an infinite loop, trace at least three iterations and write infinite loop.

```
a)
int accumulator = 0;
for (int count = 5; count < 9; ++count)
{
         accumulator = accumulator + count;
}</pre>
```

accumulator	count

```
b)
int sum = 80;
for (int count = 0; sum / 2 < 5; ++count)
{
     count = count + 1;
     sum = sum + count;
}</pre>
```

sum	count	
•		
	•	

```
c)
int points = 1;
for (int count = 1; points >= 0; count -= 2) // read carefully
{
     count = count + 2;
     points = points * count;
}
```

count	points

```
d)
String name = "SleepySunday";
String result = "";
for (int index = 2; index < name.length(); ++index)
{
    result = result + name.charAt(index) + name.charAt(index - 2);
    ++index;
}</pre>
```

result	index

```
2. (8 points; 4 points each)
   a) Translate the method below to use a while loop instead of a for loop.
public static String deleteCharacters(String source, int from, int to)
      String result = "";
      for (int index = 0; index < source.length(); ++index)</pre>
             char next = source.charAt(index);
             // Only add the characters that are not between
             // from (inclusive) and to (exclusive)
             if (index < from || index >= to)
                     result = result + next;
       }
       return result;
}
```

b) Rewrite the method below so the while loop is replaced by a for loop. The initialization, test, and increment in the for loop must be non-empty.

```
public static String subString(String source, int from, int to)
{
      String result = "";
      int index = from;
      while (index < to)</pre>
             char letter = source.charAt(index);
             result = result + letter;
             index = index + 1;
      }
      return result;
}
```